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# ISSUANCES

of the

## Meat and Poultry Inspection Program

April 1979



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Change  
79-4, Meat and Poultry  
Inspection Manual

UNITED STATES DEPARTMENT OF AGRICULTURE  
Food Safety and Quality Service  
Meat and Poultry Inspection Program  
Washington, D.C. 20250





UNITED STATES DEPARTMENT OF AGRICULTURE  
FOOD SAFETY AND QUALITY SERVICE  
MEAT AND POULTRY INSPECTION PROGRAM  
WASHINGTON, D.C. 20250

## Meat and Poultry Inspection Manual

April 1979

**CHANGE:** 79-4

### MAINTENANCE INSTRUCTIONS

Remove Page	Insert Page	Numbered
139 and 140	139 and 140	79-4

### Pen and Ink Changes

Page 192, section 20.11, line 3, add "and Post-Mortem" after the words "Ante-Mortem."

Page 196f, section 20.12(a)(3), line 13, change the number "6" to "5."

April 17, 1979



without limitation.

b. Except in products covered by \* section 319.180 of the regulations, pieces of cooked and/or smoked meat may be used without limitation if properly identified in the ingredients statement.

c. Pieces of uncooked, cured pork from primal parts may be used without limitation, if properly identified in the ingredient statement.

d. Bacon may be used in cooked sausages covered by section 319.180 of the regulations. However, it is limited to 10 percent of the meat; or meat and meat products; or meat, meat byproducts, and poultry products in a sausage formula.

e. Sausage products in edible collagen casings may be used in similar finely comminuted products without limitation and need not be peeled.

f. Finished cooked sausage in natural casings may be used in similar finely comminuted products without limitation, except sausages in bungs, middles, beef rounds, bladders, or stomachs must be stripped of the casings before use. Also, natural casings of any type that break during the stuffing operations should not be included in emulsions.

g. Semi-dry/dry sausage (other than rework that occurs during stuffing) may only be used in products processed to reach an internal temperature of 140° F. for 50 minutes, 145° F. for 5 minutes, or 150° F. or more momentarily. Rework which occurs during stuffing may only be used in subsequent production of semi-dry or dry sausages.

Processors desiring to use rework from semi-dry/dry sausage in other products may submit their written proposal through the area supervisor to STS-ISR.

#### (b) Precooked Product

Precooked specialty items stuffed in natural casings--pork stomachs, bungs, bladders, etc.--must be reheated to an internal temperature of 66° C.

(150° F.) or higher after stuffing.

Exception. This requirement may be waived whenever the inspector in charge is satisfied that the product was stuffed into natural casings which were held a minimum of 14 consecutive days in a brine solution of at least 26 percent salt by weight, or a salometer reading of 100°, or they were held a minimum of 21 consecutive days in a covering of salt (rock, flake or granulated.)

#### (c) Ingredient Calculation

The following examples show methods of calculating ingredients in cooked sausage. They are based on 10 percent added water by weight. In practice "added water" is calculated amount of water based on standard protein-moisture ratio. If the calculated amount of ingredients indicates the plant formula may result in finished product violation, the inspector should advise plant management, observe product preparation, establish true finished product yield, calculate the true percentage of ingredient based on the actual yield, and if violation is indicated, retain product and submit samples to the laboratory.

Example 1. Cooked sausage (Standard for NFDM 3 1/2 percent; added water 10 percent).

Problem. How much NFDM may be added to a batch containing 400 pounds of meat, seasonings, and other ingredients excluding ice (water) and extenders?

Procedure:

$$100\% - (3 \frac{1}{2}\% + 10\%) = 86.5\% = 0.865; 400 \div 0.865 = 462.4; 462.4 \times 0.035 \text{ or } 3 \frac{1}{2}\% = 16.2. \text{ The 16.2 pounds is the weight of NFDM that may be added if other extenders are not used.}$$

Example 2. Regular cooked sausage (ISP = 2 percent or NFDM = 3.5 percent).

Problem. How much NFDM may be used if 4 pounds of ISP are also to be added to a batch with an ingredient weight of 380 pounds (excluding water

and extenders)?

**Procedure.**

1. Determine weight excluding water and extenders as if the only extender is ISP.

2. Find theoretical finished weight:  $380 \div 0.88 [100 - (10\% \text{ added water} + 2\% \text{ ISP})] = 431.8 \text{ lbs.}$

3. Find maximum amount of ISP permitted:  $431.8 \times 0.02 = 8.6 \text{ lbs.}$

4. Find what equivalent amount of NFDM is permitted after 4 pounds of ISP that could be added. The equivalent amount of NFDM =  $\frac{3.5}{2} \times 4.6 = 8.05 = 8.1 \text{ lbs.}$

Answer: If 4 pounds of ISP are added, then maximum NFDM that can be added in this formula is 8.1 pounds.

**Example 3. Frankfurters**

**Problem.** How much ISP may be added to a batch beginning with 105 pounds of meat seasoning, and other dry ingredients with 2 pounds of NFDM?

**Procedure.**

1. Find theoretical finished weight as in previous examples:  $100 - (3 \frac{1}{2} + 10) = 86 \frac{1}{2}\%. 105 \div 0.865 = 121.4 \text{ pounds.}$

2. Find total allowable NFDM:  $121.4 \times 0.035 = 4.2 \text{ pounds.}$

3. Find equivalent amount of ISP that can be added with 2 pounds of NFDM:  $4.2 - 2 = 2.2. \text{ Equivalent ISP} = \frac{2}{3.5} \times 2.2 = 1.3 \text{ lbs.}$

3.5

Answer. 1.3 pounds of ISP may be used with 2 pounds of NFDM in the formula.

**(d) Corn syrup, sorbitol solids**

Corn syrup and/or sorbitol solids are permitted in cooked sausage not to exceed 2 percent alone or in combination.

To determine the maximum amount of corn syrup and/or sorbitol solution permitted, calculate the weight of dry solids permitted and convert to weight of liquid.

**Example.** Product is to contain corn syrup solids and cereal, or sorbitol and cereal. Weight of ingredients other than water, cereal, and

corn syrup solids or sorbitol is 260 pounds.

**Problem.** Find maximum amount of either corn syrup and cereal or sorbitol and cereal permitted in formulation.

**Procedure.**

1. 260 pounds =  $100\% - (10 + 3 \frac{1}{2} + 2) = 84 \frac{1}{2}\%.$

2. Solve for finished weight:  $260 \div 0.845 = 307.7 \text{ lbs.}$

3. Calculate weights allowed: Corn syrup solids =  $307.7 \times 0.02 = 6.2 \text{ lbs.}$

Sorbitol solids =  $307.7 \times 0.02 = 6.2 \text{ lbs.}$

Cereal =  $307.7 \times 0.035 = 10.8 \text{ lbs.}$

4. If corn syrup is used, consider syrup as 80% dry solids:

$6.2 \div 0.80 = 7.75 \text{ lbs. corn syrup.} *$

5. If sorbitol is in solution, the U.S.P. or N.F. solution is 70% solids:  $6.2 \div 0.70 = 8.9 \text{ lbs. N.F. sorbitol solution.}$

Remember that water is a part of any syrup or solution. Combinations may be calculated as in examples 2 and 3 of 18.24(c).

**(e) Definitions and Explanations for Lot Inspection**

**(1) Lot.** A shift's production of one size and basic formula or specification.

**(2) Sampling.** Divide monthly (or weekly or daily) production by 35,000 to determine the number of lots to sample for both normal and tightened inspections. However, regardless of production volume, samples must be taken as limited by Table 18.3. Sample the lots most likely to be in violation. Sampling rate may not be increased for the purpose of hastening the return to normal criteria. Select three 1-pound units of finished, unpackaged product. Each unit should represent different batches from one lot (do not composite). The inspector must be familiar with production methods and confirm that operations indicate compliance

**MEAT AND POULTRY INSPECTION (MPI)  
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UNITED STATES DEPARTMENT OF AGRICULTURE  
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